

REMARKS

Introduction

The present application includes claims 2-8. With this amendment, Applicants have canceled claim 7. Claims 2-5 and 8 have been amended. Claim 9 has been added. Upon entry of this amendment, claims 2-6, 8, and 9 will be pending.

Abstract

The Examiner has reminded the Applicants of the proper language and format of the abstract of the disclosure. In view of this reminder, Applicants provide a new abstract on a separate sheet to replace the prior abstract. Applicants believe that the new abstract meets the requirements of an abstract and that no new matter has been added.

Disclosure

The Examiner has provided suggested guidelines for the preferred layout for the specification of a utility application provided in 37 CFR 1.77(b). In view of this suggestion, Applicants have added a section entitled "Brief Description of the Drawings" which includes a brief description of Figures 1-6. Applicants believe that this amendment satisfies the Examiner's request under 37 CFR 1.77(b).

The Examiner has also objected to the disclosure at page 4, page 6, and page 9. In view of these objections, Applicants have amended the specification and believe that the objections thereto have been overcome. With regard to page 4, the objected language has been deleted. With regard to the abbreviation GAMS, Applicants have provided the correct definition. With regard to page 9, Applicants believe that the disclosure is not ambiguous. For instance, in step 2, the selected train with the earliest start time is used to determine the identity of the stations S_1 to S_j . It is these stations which are used in later steps to determine the contender set of trains. In addition, Applicants have made additional amendments to further clarify the disclosure. Applicants believe that no new matter has been added by the changes made to the disclosure.

Claim Objections

Claim 3 has been objected to for an informality. Applicants have amended claim 3 and believe that this amendment overcomes the informality noted by the Examiner.

Claim Rejections under 35 U.S.C. § 112

Claims 2-8 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The Examiner specifically refers to steps (ii), (iv), (v), and (vi). In view of this rejection, Applicants have amended claim 2 to specifically respond to the noted deficiencies pointed to by the Examiner. Applicants believe that the amendments to claim 2 have therefore have overcome the rejections under 35 U.S.C. § 112, second paragraph. Applicants believe the objections to claims 3-5, 6 and 8 have been overcome as well.

Claim Rejections under 35 U.S.C. § 103

A claimed invention is unpatentable if the differences between it and the prior art "are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art." 35 U.S.C. Section 103(a); see Graham v. John Deere Co., 383 U.S. 1, 14, 148 USPQ 459, 465 (1966). "The ultimate determination of whether an invention is or is not obvious is a legal conclusion based on underlying factual inquiries including: (1) the scope and content of the prior art; (2) the level of ordinary skill in the prior art; (3) the differences between the claimed invention and the prior art; and (4) objective evidence of nonobviousness." In re Dembiczak, 50 USPQ2d 1614, 1616 (Fed. Cir. 1999).

To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some teaching, suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine the teachings. Second, there must be a reasonable expectation of success. Finally, the Examiner must provide whatever additional findings based on the Graham factual inquiries may be necessary. M.P.E.P. § 2143. Moreover, to

establish a *prima facie* case of obviousness, the Examiner must also demonstrate that there is an apparent reason to combine the known elements in the fashion claimed by the patent at issue. see *KSR International Co. v. Teleflex Inc.*, No. 04-1350 (Slip Op. at 14.) (550 U.S. ____), (April 30, 2007), 82 USPQ2d 1385. Even if each feature of a claim can be independently shown within the cited art references, this alone is insufficient to conclude that a claim is obvious in view of such art. *Id.* Instead, to render a claim obvious over a combination of cited references, an Examiner must provide “some articulated reasoning with some rationale underpinning to support the legal conclusion of obviousness.” *Id.* In addition, establishing that a claimed combination is not a “predictable use of prior art elements according to their established functions” may be used to demonstrate nonobviousness. *Id.* at 13. In other words, the Examiner must “identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new invention does.” *Id.* at 15. Moreover, the Examiner must make “explicit” this rationale of “the apparent reason to combine the known elements in the fashion claimed,” including a detailed explanation of “the effects of demands known to the design community or present in the marketplace” and “the background knowledge possessed by a person having ordinary skill in the art.” *Id.* at 14. Finally, the Examiner cannot pick and choose among the individual elements of assorted prior art references to recreate the claimed invention to support an obvious rejection; rather, the Examiner has the burden to show some apparent reason or justification to combine the known elements in the fashion claimed by the patent at issue. See *Id.* and *Smith-Kline Diagnostics, Inc. v. Helena Laboratories Corp.*, 8 U.S.P.Q.2d 1468, 1475 (Fed. Cir.1988).

Claims 2-3, 6-7

Claims 2-3 and 6-7 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,177,684 to Harker et al. Applicants submit that the Harker et al. reference does not support the Examiner’s rejection of the present claims under 35 U.S.C. §103(a).

Harker et al. describes a method for analyzing transportation schedules in a schedule analysis decision support system to determine the feasibility of the schedules. Harker et al. uses a variation of the widely used “branch-and-bound” technique to find an

optimal crossing plan. Please see for example Harker et al. at column 7, line 55 through column 8, line 45. Harker et al. constructs an initial plan, then for each pair of trains that meet on an inappropriate section of track considers each possible crossing point. For each of these Harker et al. must solve a sub-problem involving the remaining pairs of trains. Harker et al. uses various techniques to identify partially evaluated solutions that will not be any better than the best found so far.

The Examiner states that with regard to claim 7 that Harker et al. teaches that the perturbations of train start times, and train finish times are made to enable the generation of a plurality of different sequences of dispatch decisions and refers to "station dwell time" in col. 33-34. Applicants, however, disagree with this characterization of Harker et al. Harker et al. does not disclose "generating a perturbed dispatch decision time" as claimed by Applicants in claim 1, nor does Harker et al. disclose the method of claim 1 which includes repeating this step and others to create a possible schedule. Harker et al. merely recognizes that arrival and departure times can be set consistent with minimum train free running times, station dwell time (if any) and minimum headways between following trains. Applicants believe that there is no teaching or suggestion of "generating a perturbed dispatch decision time".

In comparison, Applicants' invention uses a problem space search methodology to find a good, although not necessarily optimal, crossing plan. A fast heuristic is used to make a sequence of dispatch decisions to move the trains through the network, and then the dispatch decision parameters are perturbed to generate many alternative solutions. The method then selects the best solution according to the objective function. Please see Applicants specification beginning at column 4, line 1, of Publication No. 2005/0261946.

Applicants believe that Harker et al. does not suggest or teach Applicants' claimed invention which includes a method of moving a given set of trains from their respective origins to their respective destinations on a rail network. The method includes the steps of generating a dispatch decision time for each of the trains remaining in the schedulable set wherein the dispatch decision time is somewhere between the earliest time the train can start a next movement and the earliest time the train can complete its next movement and generating a perturbed dispatch decision time for each of the trains remaining in the schedulable set by adding a random perturbation to the dispatch decision

time of each train. Applicants therefore believe that the Examiner has not established a prima facie case of obviousness since Harker et al. does not teach or suggest all the claim limitations.

Thus, Applicants believe that Harker et al. does not support a rejection to amended claim 2 under 35 U.S.C. § 103(a). Applicants therefore believe that claim 2 is allowable. In addition, because claims 3-6, 8, and 9 each ultimately depend from claim 2, which is believed to be allowable, claims 3-6, 8, and 9 are also believed to be in condition for allowance. Removal of the rejection is respectfully requested.

Allowable Subject Matter

Claims 4-5 and 8 would be allowable if rewritten to overcome the rejections under 35 U.S.C. § 112, second paragraph. The examiner has stated that the prior art of record does not disclose a method for moving a given set of trains disclosed in claim 2 in which the dispatch decisions are generated using perturbations of train start times and train finish times the size of the perturbations being governed by the parameter of claim 8. Applicants appreciate the Examiner's indication that claims 4-5 and 8 are allowable and reserve the right to present such claims in a later response. Applicants, however, believe that claim 2 as amended is allowable. Consequently, Applicants believe that claims 4-5 and 8 which depend from claim 2, are allowable as well.

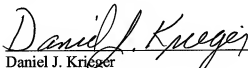
Final Comments

With the entry of the foregoing amendment, the application is believed to be in condition for allowance. Consideration of the claims leading to their allowance and passage of the application to issuance is respectfully requested. In the event there are any questions related to this amendment or to the application in general, the undersigned would appreciate the opportunity to address those questions directly in a telephone interview to expedite the prosecution of this application for all concerned.

If necessary, please consider this a Petition for Extension of Time to provide a timely response. Please charge any additional fees or credits to the account of Board McKinney & Evans, LLP Deposit Account No. 02-3223.

Respectfully submitted,

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